2.0 DECISION SUMMARY

This section describes the setting, risk analysis, and basis for no further action at AOC FS-2.

2.1 SITE NAME, LOCATION, AND BRIEF DESCRIPTION

The MMR, listed on the NPL as Otis Air National Guard/Camp Edwards, lies within the towns of Bourne, Mashpee, Sandwich and Falmouth, Massachusetts (Figure 2-1). MMR was formally added to the NPL in 1989. The FFA between the DOD, the EPA and the U.S. Department of Transportation (Coast Guard) was signed in 1991. The CERCLIS number for the site is MA2570024487. In accordance with Executive Order 12580, DOD is the lead agency for remedial actions at MMR. EPA and DEP are the support agencies for this action. In 1995, the FFA was amended to add the U.S. Air Force as the lead agent for the cleanup at MMR. The FFA, as amended, requires the U.S. Air Force to implement CERCLA requirements at MMR.

2.1.1 Cape Cod and the Massachusetts Military Reservation

The MMR occupies approximately 22,000 acres on Cape Cod and provides facilities for several operating command units: the Massachusetts Air National Guard, the Massachusetts Army National Guard, the U.S. Air Force, the U.S. Coast Guard (USCG), and the Veterans Administration. Past military training and maneuvers, military aircraft operations, and maintenance and support activities have resulted in releases of hazardous materials at MMR.

MMR has a year-round population of approximately 2,300, which increases by several thousand due to seasonal military training activities. Property use in towns surrounding MMR is primarily residential, light industrial and agricultural.

MMR is located on two distinct sedimentary units that were deposited by a lobe of the Laurentian ice sheet. MMR lies primarily on a broad, flat, gently southward-sloping glacial outwash plain known as the Mashpee Pitted Plain and to a lesser extent on the

Buzzards Bay Moraine (Figure 2-1). The Mashpee Pitted Plain consists of stratified outwash sand underlain by either silty glaciolacustrine sediment and/or basal till. The topography of the Mashpee Pitted Plain gradually slopes from 140 feet above mean sea level (msl) in the north to 70 feet msl in the south and is pocked with numerous kettle ponds. The Buzzards Bay Moraine, located to the west of the Mashpee Pitted Plain, consists of a north-south ridge of bouldery till overlying reworked drift deposits. The surface of the Buzzards Bay Moraine is hummocky with a complex topography that can vary from approximately 80 to 220 feet msl. There are few ponds located within the Buzzards Bay Moraine.

The single groundwater flow system that underlies western Cape Cod, including MMR, is known as the Sagamore Lens. This sole-source aquifer is primarily unconfined and recharged by infiltration of precipitation. Groundwater flow is generally radial from the recharge area toward the ocean, which forms the lateral boundary of the aquifer on three sides; the Bass River in Yarmouth forms the eastern boundary of the Sagamore Lens. Flow direction within the aquifer is generally horizontal with stronger vertical gradients near surface water bodies. Ponds are generally an expression of the water table and are hydraulically connected with the aquifer. Water table elevations fluctuate from 1 to 4 feet per year.

2.1.2 The Fuel Spill-2 Site

AOC FS-2 (Figures 2-2 and 2-3) consists of 5.5 acres of flat, unvegetated, unimproved land located near the southern boundary of the MMR, directly south of the MMR golf course. The area contains one main-line railroad track and several rail sidings. AOC FS-2 was originally used for unloading and distributing jet fuel and aviation gasoline. Before decommissioning, the site contained a petroleum unloading rack, a pump house and associated underground piping. Fuels were unloaded from tanker truck and railroad tank cars and conveyed through the underground piping to the MMR petroleum fuels storage area (PFSA). The unloading facility was taken out of service in 1965, and the header and associated underground piping were drained and abandoned in place (E. C. Jordan 1991). At various dates prior to 1993, the pump house, transfer and header pipes,

and subsurface fuel transfer pipes were removed (Figure 2-3). Railroad tracks still exist on the site, and trains pass through the site twice per day.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

Military use of MMR has occurred since 1911. The most intense periods of activity occurred from 1940 to 1946 and 1955 to 1970. Sources of contamination resulting from a variety of military operations include historical chemical spills, motor pools, landfills, fire training areas, and drainage structures such as dry wells and drainage swales.

The MMR site history is defined by a series of complex interactions between various federal agencies and the Commonwealth of Massachusetts. These interactions are described in the MMR Strategic Plan (AFCEE 1996). Activities resulting in CERCLA actions are summarized below.

In 1982, the DOD initiated the Installation Restoration Program (IRP) at the Otis Air National Guard Base area of the MMR. The National Guard Bureau (NGB) was responsible for implementing the IRP at MMR. In 1986, the IRP was expanded to include all potential hazardous waste sites at MMR. The IRP investigatory process continued with review and interaction from the DEP. In 1989, MMR was formally added to the NPL. An FFA among the DOD, the EPA, and the U.S. Department of Transportation (Coast Guard) was signed in 1991. The FFA provides a framework for EPA oversight and enforcement of the MMR investigations and cleanup activities and identifies a schedule for cleanup activities. A Community Relations Plan is included as an attachment to the FFA. In 1996, the EPA Region I Administrator requested that DOD provide a new management structure for the MMR IRP. In response to that request, the U.S. Air Force assumed the lead role in the execution of the IRP and assigned AFCEE to manage the program (Amendment 1 to the FFA). Under Amendment 2, additional enforceable milestones and the Plume Response Decision Criteria and Schedule were added to the FFA. More recently, the U.S. Department of Transportation (Coast Guard) has been removed from its status as a party to the FFA (Amendment 3 to the FFA). Amendment 4 added Section 7003 of the Resource Conservation and Recovery Act

(RCRA) to the FFA in order to address contamination caused solely by petroleum releases that fall within the scope of the CERCLA "petroleum exclusion" described in the last sentence of CERCLA Section 101(14).

Because of the reported spills of fuel at the FS-2 study area, it was identified as a potential hazardous waste site (Metcalf and Eddy, Inc. 1983). Investigative activities at AOC FS-2 taken before and during the 1991 remedial investigation (RI) at FS-2 included reviewing historical site records, excavating test pits, conducting a soil-gas survey, drilling borings to sample subsurface soil and groundwater, sampling surface soil, mapping the nature and extent of contamination, and conducting human health and ecological risk assessments. The 1991 draft RI report for FS-2 (E.C. Jordan 1991) concluded that no further groundwater and subsurface soil sampling was necessary and that a No Further Action alternative was appropriate for these media; it also concluded, however, that some of the surface soil at the site posed human health risks that should be the focus of a feasibility study for AOC FS-2.

At the same time the draft FS-2 RI report was being reviewed (1991-1992), remedial alternatives for three other MMR sites (Chemical Spill [CS]-4, FS-25, and Fire Training Area [FTA]-1, which had completed RIs) were evaluated collectively in one engineering evaluation and cost analysis (EE/CA) due to similarities in site conditions and contamination. With public input, excavation and thermal treatment of soil was selected as the remedy for these AOCs. Design and construction of a low-temperature thermal treatment system began at MMR to thermally treat the contaminated soil from CS-4, FS-25 and FTA-1. In 1993, a technical memorandum recommended including the contaminated surface soil from FS-2 in the thermal treatment project (ABB 1993). The recommendation was implemented because the FS-2 surface soil contamination could be destroyed successfully by thermal treatment, and including AOC FS-2 in the project would not significantly increase the project schedule or costs. In 1996, approximately 520 tons of soil were removed from FS-2 and treated at the low-temperature thermal treatment system (EHRT 1996).

The Southwest Operable Unit (SWOU) RI conducted in 1998 concluded that groundwater flowing from the AOC FS-2 did not pose any unacceptable risks to human health or the environment (AFCEE 1999c). However, the SWOU RI identified a former maintenance pit at FS-2 where subsurface soil had not been sampled during the previous investigations. In addition, when the 1991 FS-2 RI report was reviewed in 1999, sufficient uncertainties were identified to warrant a supplemental RI to confirm the absence of contamination in surface and subsurface soils.

AFCEE conducted a supplemental RI at FS-2 in 2000 (AFCEE 2001b). This investigation focused on evaluating the nature and extent of petroleum-based organic contaminants that may have remained in surface and shallow subsurface soils, sampling surface and subsurface soils within the former maintenance pit, and evaluating the level of risk site contaminants might pose to human health and ecological receptors.

The supplemental RI concluded that no further assessment or remedial action is warranted for site soils. Although the initial 1991 FS-2 RI report was not finalized, comments from the regulatory agencies were resolved in 2000. The Final FS-2 Supplemental RI Report (AFCEE 2001b) was issued in January 2001, and the Proposed Plan (AFCEE 2001a) was issued in May 2001.

2.3 COMMUNITY PARTICIPATION

The MMR IRP has a very robust community involvement program that provides many opportunities for the public to become involved in the investigation and decision-making process. Public meetings and poster board sessions are held, display ads are placed in newspapers to announce significant events and meetings, news releases are issued, tours of the sites and treatment facilities are conducted, neighborhood notices are distributed to notify people of events impacting their neighborhoods, and public notices of other kinds are issued.

In addition, several citizen teams advise the IRP and the regulators about the program. They include the Senior Management Board and the Plume Cleanup Team (PCT)[1]. The PCT is composed of the Plume Containment Team, the Long-Range Water Supply Team, and the Public Information Team. All these teams are composed of citizen volunteers and government representatives working together to resolve problems and complete the cleanup. All citizen team meetings are open to the public. Certain teams are decision-making teams. They include the Executive Review Group, the Management Review Group, and the Remedial Project Managers. A technical advisory team called the Technical Review and Evaluation Team advises the decision-making teams. Assumptions about reasonably anticipated future land use and potential beneficial uses of groundwater and surface water are regularly discussed in these meetings.

The public has been kept up to date on the progress of FS-2 investigation and assessment activities through the various public and citizen team meetings described above. The original RI report (E. C. Jordan 1991) presented the assessment of contamination at AOC FS-2 prior to the excavation and treatment of soil. The public comment period for the supplemental RI work plan was conducted from 17 April to 01 May 2000. The supplemental RI report (AFCEE 2001b) describes the extent of contamination at AOC FS-2 and was made available to the public in January 2001. These documents can be found in the Administrative Record file maintained at the MMR IRP office, the Falmouth, Bourne, Mashpee, and Sandwich public libraries, and at the USCG library located on MMR. Appendix B of this report presents an index of the Administrative Record for AOC FS-2.

The notice of availability of the Proposed Plan was published on 04 May 2001 in the Falmouth Enterprise, the Bourne Enterprise, the Mashpee Enterprise, and the Sandwich Enterprise, and on 10 May 2001 in the Cape Cod Times. The public comment period was from 16 May 2001 to 14 June 2001. A public meeting was held on 15 May 2001 to present the proposed plan to a broad community audience. At this meeting,

[1] Prior to June 2001, the PCT was known as the Joint Process Action Team (JPAT).

representatives from AFCEE presented the justification for no further action and answered questions from the audience. On 07 June 2001, a public hearing was held to receive formal public comment, which is included in the official record (Appendix C). The proposed plan for FS-2 was also presented and discussed at two PCT meetings (09 May and 13 June 2001). AFCEE's responses to all the comments received during the comment period are included in the Responsiveness Summary, which is Section 3.0 of this ROD.

2.4 SCOPE AND ROLE OF AREA OF CONTAMINATION (AOC)

The remedy for soil and groundwater at AOC FS-2 is part of the overall cleanup program for soil and groundwater at MMR. The overall MMR environmental cleanup program goal for groundwater is 100 percent capture of all plumes above maximum contaminant levels or other risk-based levels, and treatment of contaminants to background levels if technically and economically feasible. The program's principles include pursuing remedial action strategies that are cost-effective while being fully protective of human health and the environment.

Examples of remedial actions that support this strategy are documented in:

- *Record of Decision for Interim Remedial Action: West Truck Road Motor Pool (AOC CS-4) Groundwater Operable Unit* (HAZWRAP 1992).
- *Final Record of Decision, Area of Contamination FS-1* (AFCEE 2000a)
- *Final Record of Decision for the CS-4, CS-20, CS-21, and FS-13 Plumes* (AFCEE 2000c).

Numerous source control actions have been undertaken as part of MMR's strategy to promptly remove sources of continuing groundwater contamination. Examples of source area removal/control actions that support this strategy are documented in:

- *Final Record of Decision, Area of Contamination CS-10/FS-24 Source Areas* (AFCEE 1999b)
- *Final Record of Decision, Areas of Contamination CS-16/CS-17 Source Areas* (AFCEE 1999d)

- *Final Record of Decision, Areas of Contamination FTA-2/LF-2, PFSA/FS-10/FS-11, SD-2/FS-6/FS-8, SD-3/FTA-3/CY-4, SD-4, and SD-5/FS-5 Source Areas* (AFCEE 1998a).

When analysis of the environmental data at a site indicates that the remaining contamination poses no significant risk to human health or the environment, the site is removed from the overall MMR cleanup program. The decision for No Action or No Further Action has been made for several sites at MMR, and examples are documented in:

- *Final Decision Document, Study Area CS-14* (AFCEE 2000b)
- *Final Record of Decision, Area of Contamination FS-17 and Area of Contamination FS-19* (AFCEE 1999a)
- *Record of Decision, AOC CS-3 (USCG) 3-in-1 Store* (AFCEE 1998b).

This ROD for AOC FS-2 is consistent with CERCLA and the overall cleanup strategy for MMR, and is fully protective of human health and the environment.

2.5 SITE CHARACTERISTICS

AOC FS-2 is located within the Mashpee Pitted Plain. This unit, consisting of well to poorly sorted, fine- to coarse-grained sand, forms a broad outwash plain located between the Sandwich Moraine and the Buzzards Bay Moraine, situated to the north and west, respectively. The shallow subsurface geology beneath FS-2 was further defined during soil boring advancement. The area is underlain primarily by medium-dense, medium-grained sand (Unified Soil Classification System designation SP), containing a trace to little fine and coarse sand, silt, and fine gravel. This deposit is part of the upper section of the Mashpee Pitted Plain.

The land at the FS-2 source area is not identified as a high priority site for rare species or as an exemplary natural community. No state-listed rare plants or animals have been observed at the project site during field surveys.

AOC FS-2 consists of 5.5 acres of land located at the end of Guenther Road, adjacent to the southern boundary of the MMR golf course. Currently, the site exists as flat, unvegetated, unimproved land, traversed by two railway lines that parallel the golf course. There are no surface water features in the vicinity of the FS-2 source area. A concrete roadway lies to the south of the tracks. To the south of the roadway is undeveloped land consisting of thick pine, scrub, oak and brush. The site is not currently being used, and access is unrestricted. Trains traveling to and from the local waste transfer station pass through the site twice per day.

From 1955 to 1965, the site was used to operate a petroleum unloading and transfer station. Aviation gasoline (AVGAS) and jet propellant fuel (JP-4) were unloaded from railroad tank cars and tanker trucks and conveyed through underground piping to the MMR PFSA. Previous historical record searches indicated that as much as 110,000 gallons of petroleum product might have been released during the operational life of the station (E. C. Jordan 1990). Field investigations have detected petroleum compounds (volatile organic compounds [VOCs], SVOCs, extractable petroleum hydrocarbons [EPHs], volatile petroleum hydrocarbons [VPHs], polyaromatic hydrocarbons [PAHs]), and metals in soils at AOC FS-2.

The sampling strategy for the FS-2 investigations conducted from 1985 to 2000 included geologic, hydrogeologic, and chemical characterization of groundwater and soil. Several tasks were performed to improve the understanding of the source study area geology and hydrology, including test pitting, drilling, and well installation. Detailed elements of the field investigations are summarized in the original remedial investigation documents (E. C. Jordan 1991; AFCEE 2001b).

Figures 2-4 and 2-5 show the locations of surface soil sampling points, test pits, soil borings, and monitoring wells used for the pre-2000 field investigations discussed in Section 2.5.2.

2.5.1 Conceptual Model of FS-2

Some of the fuel spilled at the AOC FS-2 volatilized before infiltrating into the ground, and some of the fuel that infiltrated into the ground at FS-2 adhered to the soil matrix and was chemically degraded over time. The compounds that presently remain in subsurface soils are weathered and relatively immobile. The more mobile compounds in the fuel spilled at AOC FS-2 entered the aquifer through infiltration of precipitation. At AOC FS-2, the water table is approximately 45 feet below ground surface (ft bgs), and groundwater flows in a south-southwesterly direction As precipitation passed through the unsaturated (vadose) zone, contaminants bound in the soil matrix were dissolved and carried down by gravity to the water table. The contaminated water then entered the aquifer and migrated downgradient to form a plume. As the plume migrated further downgradient, clean precipitation accumulated at the water table above the plume, forming a wedge of clean water over the plume. This wedge of clean water forces the plume deeper into the aquifer with increasing distance from the source area. Through natural processes such as dissolution and degradation and by subsequent remedial action, contaminants were removed from the source area. These processes caused the plume to detach from the source area as clean water flushed through the aquifer in the source area. Presently, there is no plume of fuel-related groundwater contamination beneath or immediately downgradient of AOC FS-2. Figure 2-6 depicts the path of water that would have originated at the FS-2 source area. AFCEE managed the investigation and remedy selection for the area downgradient of AOC FS-2, using a regional approach (rather than a plume-specific approach) in the designation of this area as the Southwest Operable Unit (SWOU). The source areas for the FS-28, FS-29, CS-20 and CS-21 SWOU plumes have not been identified. The investigations concluded that the ethylene dibromide (EDB) within the FS-28 plume probably originated from fuels spilled at more than one specific area of MMR. It is likely that AOC FS-2 is one of the sites that contributed to the FS-28 plume. It is also possible that fuel contamination originating at FS-2 discharged to Coonamessett Pond.

2.5.2 Sampling Strategy and Contamination Assessment

This section describes the historical sampling efforts and applicable contaminant results from FS-2. Data from the initial RI (E. C. Jordan 1991) are summarized in Appendix D, and the pertinent data from the more recent supplemental RI (AFCEE 2001b) are summarized in Figures 2-7 through 2-9. It is noteworthy that data from older investigations are approximately a decade old. As such, they contribute minimally to the basis for the selected remedy of No Further Action. Significant natural (e.g., biological degradation) and anthropogenic (e.g., soil removal and treatment) activities have modified the contamination characteristics at AOC FS-2, so pre-treatment measurements are not considered in the summary of site risks discussed in Section 2.7.

R. F. Weston Inc. conducted a site inspection in 1985, which included excavating 18 test pits and installing two monitoring wells (R. F. Weston, Inc. 1985). Weston's study did not identify fuel contamination in near-surface soils, but liquids sampled from header pipe openings contained naphthalene, ethylbenzene, toluene and xylenes. Groundwater from one well located downgradient of AOC FS-2 (03MW0603D) contained ethylbenzene, xylenes and 4-methyl-2-pentanone.

In 1989, a soil-gas survey and soil sampling at two test pits and four soil borings were completed. One groundwater monitoring well was installed in each of the borings. The soil-gas survey involved the advancement of 42 sampling points throughout AOC FS-2 to a maximum depth of 5 ft bgs. Trace concentrations of trichloroethene (TCE), toluene, and xylenes were reported. It was concluded that no discernable contaminant pattern was present and that the results did not indicate the presence of significant shallow soil contamination (E. C. Jordan 1990). SVOCs were present in the surface soil sample recovered from the boring (32MW0003) (Figure 2-4) drilled to the east of the pump house (Appendix D). Trace SVOCs were detected in the surface soil samples taken from borings drilled adjacent to the pump house (32MW0001), and adjacent to the northernmost rail line (32MW0002 and 32MW0004). The pesticide dieldrin was measured at 25 micrograms per kilogram (µg/kg) in the surface soil sample collected from the boring drilled adjacent to the former pump house (32MW0001). The following

metals were detected in the samples: aluminum, arsenic, chromium, iron, lead, and mercury (only one sample). The highest metal concentrations were reported for the surface soil samples.

Based on the investigation work conducted in 1989, it was concluded that soil at the FS-2 source area did not show a significant impact from historical fuel-handling activities. The elevated concentrations of SVOCs in one of the surface samples were attributed to the mixture of fine coal particles within the soil matrix and not to fuel-handling practices. The analytes detected in FS-2 soil were similar to those detected in shallow soil samples collected from a former coal yard in another section of the MMR (E. C. Jordan 1991). This coal yard was located immediately southeast of AOC FS-2, along the tracks that crossed FS-2.

The draft RI report was completed in February 1991 (E. C. Jordan 1991). RI fieldwork included the sampling and analyses of groundwater, surface soil, subsurface soil, and the residual liquid from the header pipes. Residual liquid in one of the header pipes was sampled and analyzed for VOCs, total petroleum hydrocarbons (TPH), and lead. This sample contained 180 milligrams per liter (mg/L) of TPH. Based on visual inspections, water/fuel mixtures occurred in two of the headers. It was subsequently concluded that the header piping was not a continuous source of contamination and that the piping did not appear to be leaking (E. C. Jordan 1991). This piping was removed from the ground in 1992.

During the sampling of surface soil in the vicinity of 32MW0003, a thin, 1- to 2-inch layer of oil-stained soil was identified adjacent to the well. This layer extended beyond the immediate vicinity of 32MW0003. In one surface soil sample collected adjacent to the well (SS-1), individual SVOCs were present in concentrations ranging from 10 to 51 milligrams per kilogram (mg/kg). A number of surface soil samples were also tested for TPH and metals. TPH was not detected. The following metals were detected: aluminum, arsenic, copper, iron, lead, manganese, vanadium, and zinc.

Two surface soil samples were collected adjacent to the former pump house (SS-7 and SS-8) (Figure 2-4). SVOCs similar to those found in soil adjacent to 32MW0003 were detected in these samples at concentrations ranging from 0.38 to 5.2 mg/kg. In addition to the sampling, hand digging was completed in this area to determine the extent of discolored soil that was identified in test pits dug in 1985. Based on the results of the RI and previous work, it was concluded that historical fuel spills had caused the near-surface soil stains and contributed to the petroleum contamination of shallow soil near the pump house and adjacent to 32MW0003. Aluminum, arsenic, chromium, lead, manganese, vanadium, and zinc were detected at concentrations 10 times the established background level. The elevated concentrations of lead and the occurrence of the other metals were attributed to spills of lead-containing AVGAS and the use of the area as a railroad yard (E. C. Jordan 1991).

Following soil excavation and treatment in 1996 (Section 2.2), groundwater sampling was completed in May 1998 as part of the SWOU RI (AFCEE 1999c). Groundwater samples were collected from eight shallow wells (02MW1202C,E, 02MW1203A, 03MW0603D, 32MW0003, 32MW1302, 32MW1307, and 32MW1308) located in and around AOC FS-2 (Figure 2-5). Concentrations of the fuel-related VOCs ethylbenzene (11 micrograms per liter [µg/L]) and xylenes (20 µg/L) were detected in groundwater sampled from one well (02MW1202E) located 450 feet south and hydraulically downgradient of FS-2. The concentrations were well below the respective 700- and 10,000-µg/L drinking water standards established for these compounds. Risks to human health associated with FS-2 groundwater, as quantified during the SWOU RI, are discussed in Section 2.7 of this report.

A supplemental RI was carried out in April 2000 to investigate the extent of any remaining petroleum contamination in surface and shallow subsurface soil at FS-2. This investigation involved the advancement of 10 soil borings across AOC FS-2 to a depth of 20 ft bgs, the recovery of soil samples, field screening for volatiles, and laboratory analyses. Results of these investigations showed that some petroleum-derived SVOCs remained in the soil at AOC FS-2 (Figures 2-7 and 2-8). The highest concentrations were

detected in samples collected near the former AVGAS and JP-4 header pipes and at the former railroad maintenance pit. At the header locations, total SVOC concentrations in soils between 0 and 20 ft bgs ranged from 638 to 13,479 µg/kg. At the former maintenance pit, total SVOCs were detected at 8,598 µg/kg. Lower concentrations of total SVOCs ranging from 526 to 1,205 µg/kg were detected in samples collected adjacent to the former pump house and 32MW0003. These detections did not extend below 6 feet at these locations. These soil SVOCs are expected to remain relatively immobile, and lighter compounds are expected to continue weathering over time.

Analyses for metals were also part of the supplemental RI. Metals were found in FS-2 soils at levels equivalent to background levels, and given the physical and chemical site conditions, the metals are not expected to migrate from the site. As discussed in Section 2.7.1, arsenic in the surface soil (Figure 2-9) was evaluated because of the potential for this metal to pose human health risks.

2.6 CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

This section discusses the current and reasonably anticipated future land uses and current and potential beneficial groundwater uses in the vicinity of the FS-2 source area.

2.6.1 Land Use

The FS-2 site is currently undeveloped. Future land use most likely will be recreational or industrial. It is possible, although unlikely, that future land use could be residential or agricultural.

2.6.2 Water Resource Use

The aquifer throughout upper Cape Cod, referred to as the Sagamore Lens, is generally highly transmissive and is a potentially productive aquifer. Because the Sagamore Lens is designated as a sole-source aquifer, all future groundwater use, regardless of location, is considered residential from a regulatory perspective.

Current groundwater uses in the town of Falmouth include residential, agricultural, and commercial. All residences potentially impacted by contaminants from the FS-2 source area are connected to public water supplies. Some residences also have private wells for nonpotable purposes. Agricultural uses include those associated with cranberry bogs and small farms in the area. Surface water bodies, which are generally fed by groundwater, provide recreational opportunities, including wading, swimming, and fishing.

AFCEE has developed a working relationship with the water commissioners of the town of Falmouth to ensure that future development of the groundwater resource is coordinated with planned and ongoing remediation at MMR.

2.7 SUMMARY OF SITE RISKS

The baseline risk assessments estimate what risks the site poses if no action were taken. If contaminants and exposure pathways need to be addressed by remedial action, they are identified by the risk assessments. This section of the ROD summarizes the results of the human health and ecological baseline risk assessments for the FS-2 site, which were conducted as part of the supplemental RI based on soil data collected in 2000 and groundwater data collected in 1998. These risk assessments form the basis for the No Further Action decision.

2.7.1 Summary of Human Health Risk Assessment

This section summarizes the baseline human health risk assessment conducted as part of the FS-2 supplemental RI. The following subsections focus primarily on exposure pathways, environmental media, and contaminants of potential concern that contributed to potential unacceptable site risks. A complete description of the methods and results of the baseline human health risk assessment is presented in Section 7.1 of the *Final Fuel Spill-2 Supplemental Remedial Investigation Report* (AFCEE 2001b).

Click here to view conclusion of Section 2